ORBIT®

THE POWER OF PEOPLE

LT AERIAL BUNCH CABLE

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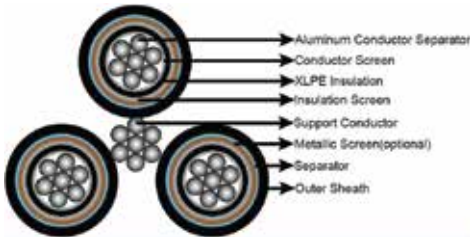
THE QUALITY REVOLUTION

ORBIT LT AERIAL BUNCH CABLE

1.1 KV Volt Grade, are used for distributing power to individual consumers by utility service providers such as electricity boards and electricity distributing authorities. The cables are suspended overhead using electrical poles. The cables can be tapped intermittently from any required position, enabling them to be used in urban as well as rural areas.

Configuration :

Single Phase or Three Phase systems with or without Street Light line.



Conductor :

Phase or lighting conductor: Electrical grade Aluminium of H2 or H4 grade as per IS: 8130

Messenger conductor: Aluminium Silica and Magnesium Alloy.

Insulation :

XLPE with Sioplas Technique.

Identification of Phase :

Ridges provided on the insulation of Phase Conductors: 1 ridge for the 1st phase, 2 ridges for the 2nd phase and 3 ridges for the 3rd phase. The Neutral phase may have 4 ridges if required.

Colour of Insulation :

As the cable remains exposed to environmental elements such as UV rays from sunlight, the insulation is mixed with a small amount of carbon black to prevent the deterioration of polythene.

Construction of Cable :

The phase conductor can be of single phase or three phases. A lighting conductor can be also incorporated for street lighting. A messenger conductor supports the weight of the cable and keeps the assembly strung under tension.

Phase conductors are made of concentrically stranded Aluminium Wires having 7 or 19 wires. Messenger conductors are made of a specially treated Silica, Magnesium and Aluminium Alloy having 7 or 19 wires. Phase and lighting conductors may be insulated with XLPE compound of Sioplas Technology. Messenger conductors are kept either bare or insulated. Phase and lighting conductors are sometimes twisted around the messenger conductor. In special cases a neutral conductor may also be provided separately. Generally, the messenger acts as earth and neutral.

This construction has additional advantages :

Cables are lighter in weight

Easy to install

Can be installed on poles, on walls etc.

Easy to make terminations and branch off joints on live wire as well

Protection against power theft

Quality and Testing :

At Orbit Cables in house testing of raw materials & testing during processing at every stage is a must. There is no lapse allowed at any point where constant improvement is monitored from the beginning to the last stage. Though the construction of LT Aerial Bunch Cables appease quite simple, the manufacturing technique should be such that the cable can accept and withstand all the severe operational hazards for all the times under any circumstances.

Orbit Cables ,Understanding all the inherent intricate operational significance of Aerial Bunch Cables, have oriented themselves to manufacture these cables for the power distribution system particularly for the varied Indian conditions.

Orbit Aerial Bunched Cable: 1.1KV grade Stranded & Compacted Aluminium Phase Conductor, and Stranded Messenger Conductor with All Aluminium Alloy, Phase Conductor is insulated with XLPE (Sioplas) Compound, Messenger is either insulated or bare. Referred specification IS:14255-1995 up to the latest amendment.

Sl. No.	Description and Type of Cable	Number of Wires		Thickness of XLPE Insulation		Approx overall Diameter	Approx Weight of Cable	Beating Load of Messen-ger	Maximum D.C Resistance Ohms / Km		AC Current Rating Amps
		Phase	Messenger	Phase	Messenger						
				mm	mm	mm	Kg/KM	KN (Min)	Phase	Messenger	in air at 40° C
	With insulated messenger conductor										
1	1 C x 16 mm^2 + 25 mm^2 (insulated)	7	7	1.20	1.20	20.0	165	7.0	1.910	1.380	72
2	3 C x 16 mm^2 + 25 mm^2 (insulated)	7	7	1.20	1.20	22.0	301	7.0	1.910	1.380	64
3	1 C x 25 mm^2 + 25 mm^2 (insulated)	7	7	1.20	1.20	22.4	195	7.0	1.200	1.380	99
4	3 C x 25 mm^2 + 25 mm^2 (insulated)	7	7	1.20	1.20	25.0	390	7.0	1.200	1.380	84
5	1 C x 35 mm^2 + 25 mm^2 (insulated)	7	7	1.20	1.20	27.3	227	7.0	0.868	1.380	120
6	3 C x 35 mm^2 + 25 mm^2 (insulated)	7	7	1.20	1.20	27.4	486	7.0	0.868	1.380	105
7	1 C x 35 mm^2 + 35 mm^2 (insulated)	7	7	1.20	1.20	28.0	259	10.1	0.868	0.986	120
8	3 C x 35 mm^2 + 35 mm^2 (insulated)	7	7	1.20	1.20	28.4	518	10.1	0.868	0.986	105
9	1 C x 50 mm^2 + 35 mm^2 (insulated)	7	7	1.50	1.20	29.0	317	10.1	0.641	0.986	150
10	3 C x 50 mm^2 + 35 mm^2 (insulated)	7	7	1.50	1.20	32.3	692	10.1	0.641	0.986	130
11	3 C x 70 mm^2 + 50 mm^2 (insulated)	7	7	1.50	1.50	37.5	939	14.0	0.443	0.689	155
12	3 C x 70 mm^2 +70 mm^2 (insulated)	7	7	1.50	1.50	39.0	1002	19.7	0.443	0.492	155
13	3 C x 95 mm^2 + 70 mm^2 (insulated)	19	7	1.50	1.50	42.7	1237	19.7	0.32"	0.492	190
14	3 C x 120 mm^2 + 70 mm^2 (insulated)	19	7	1.60	1.50	46.0	1482	19.7	0.253	0.492	220
15	3 C x 150 mm^2 + 70 mm^2 (insulated)	19	7	1.80	1.50	50.0	1791	19.7	0.206	0.492	250
	With bare messenger conductor										
1	1 C x 16 mm2 + 25 mm2 (Bare)	7	7	1.20	N.A	18.5	137	7.0	1.910	1.380	72
2	3 C x 16 mm2 + 25 mm2 (Bare)	7	7	1.20	-do-	19.3	272	7.0	1.910	1.380	64
3	1 C x 25 mm2 + 25 mm2 (Bare)	7	7	1.20	-do-	19.5	167	7.0	1.200	1.380	99
4	3 C x 25 mm2 + 25 mm2 (Bare)	7	7	1.20	-do-	20.5	362	7.0	1.200	1.380	84
5	1 C x 35 mm2 + 25 mm2 (Bare)	7	7	1.20	-do-	22.0	199	7.0	0.868	1.380	120
6	3 C x 35 mm2 + 25 mm2 (Bare)	7	7	1.20	-do-	23.5	458	7.0	0.868	1.380	105
7	1 C x 35 mm2 + 35 mm2 (Bare)	7	7	1.20	-do-	24.6	226	10.1	0.868	0.986	120
8	3 C x 35 mm2 + 35 mm2 (Bare)	7	7	1.20	-do-	25.0	485	10.1	0.868	0.986	105
9	1 C x 50 mm2 + 35 mm2 (Bare)	7	7	1.50	-do-	26.6	284	10.1	0.641	0.986	150
10	3 C x 50 mm2 + 35 mm2 (Bare)	7	7	1.50	-do-	26.8	659	10.1	0.641	0.986	130
11	3 C x 70 mm2 + 50 mm2 (Bare)	7	7	1.50	-do-	31.2	890	14.0	0.443	0.689	155
12	3 C x 70 mm2 +70 mm2 (Bare)	7	7	1.50	-do-	34.4	946	19.7	0.443	0.492	155
13	3 C x 95 mm2 + 70 mm2 (Bare)	19	7	1.50	-do-	36.0	1179	19.7	0.320	0.492	190
14	3 C x 120 mm2 + 70 mm2 (Bare)	19	7	1.60	-do-	38.0	1425	19.7	0.253	0.492	220
15	3 C x 150 mm2 + 70 mm2 (Bare)	19	7	1.80	-do-	40.0	1735	19.7	0.206	0.492	250

Twisting and Laying :

The phase conductors are being allowed to slide freely over the messenger conductor during temperature fluctuation. It is also to be ensured that during sliding the insulation should not get scratches due to rubbing effect. During expansion and contraction, the phase conductors try to move toward the ends exerting additional stress at the terminating point or at the clipping point. By special twisting process such forces are neutralised. During installation and branching off, phases conductors can easily be loosened to crimp to the connectors without straining and damaging the phase conductor.

Orbit Aerial Bunched Cable: 1.1KV grade Stranded & Compacted Aluminium Phase Conductor, and Stranded Messenger Conductor with All Aluminium Alloy, Phase Conductor is insulated with XLPE (Sioplas) Compound, Messenger is either insulated or bare with lighting conductor of 16mm². Referred specification IS:14255-1995 up to the latest amendment.

Sl. No.	Description and Type of Cable	Number of Wires		Thickness of XLPE Insulation		Approx overall Diameter	Approx Weight of Cable	Beating Load of Messen-ger	Maximum D.C Resistance Ohms / Km		AC Current Rating Amps
		Phase	Messenger	Phase	Messenger						
				mm	mm	mm	Kg/KM	KN (Min)	Phase	Messenger	in air at 40° C
	With insulated messenger conductor										
1	3 C x 16 mm2 + 25 mm2 (insulated)+16mm2	7	7	1.20	1.20	23.5	369	7.0	1.910	1.380	62
2	3 C x 25 mm2 + 25 mm2 (insulated)+16mm2	7	7	1.20	1.20	25.0	457	7.0	1.200	1.380	82
3	3 C x 35 mm2 + 25 mm2 (insulated)+16mm2	7	7	1.20	1.20	27.5	554	7.0	0.868	1.380	103
4	3 C x 35 mm2 + 35 mm2 (insulated)+16mm2	7	7	1.20	1.20	28.4	586	10.1	0.868	0.986	103
5	3 C x 50 mm2 + 35 mm2 (insulated)+16mm2	7	7	1.50	1.20	32.5	760	10.1	0.641	0.986	127
6	3 C x 70 mm2 + 50 mm2 (insulated)+16mm2	7	7	1.50	1.50	37.5	1007	14.0	0.443	0.689	154
7	3 C x 70 mm2 +70 mm2 (insulated)+16mm2	7	7	1.50	1.50	39.5	1070	19.7	0.443	0.492	154
8	3 C x 95 mm2 + 70 mm2 (insulated)+16mm2	19	7	1.50	1.50	42.5	1304	19.7	0.320	0.492	188
9	3 C x 120 mm2 + 70 mm2 (insulated)+16mm2	19	7	1.60	1.50	46.8	1550	19.7	0.253	0.492	218
10	3 C x 150 mm2 + 70 mm2 (insulated)+16mm2	19	7	1.80	1.50	50.8	1860	19.7	0.206	0.492	248
	With bare messenger conductor										
1	3 C x 16 mm2 + 25 mm2 (Bare)+16mm2	7	7	1.20	N.A	19.5	340	7.0	1.910	1.380	62
2	3 C x 25 mm2 + 25 mm2 (Bare)+16mm2	7	7	1.20	-do-	20.5	429	7.0	1.200	1.380	82
3	3 C x 35 mm2 + 25 mm2 (Bare)+16mm2	7	7	1.20	-do-	23.5	526	7.0	0.868	1.380	103
4	3 C x 35 mm2 + 35 mm2 (Bare)+16mm2	7	7	1.20	-do-	25.0	553	10.1	0.868	0.986	103
5	3 C x 50 mm2 + 35 mm2 (Bare)+16mm2	7	7	1.50	-do-	26.8	727	10.1	0.641	0.986	127
6	3 C x 70 mm2 + 50 mm2 (Bare)+16mm2	7	7	1.50	-do-	31.5	958	14.0	0.443	0.689	154
7	3 C x 70 mm2 +70 mm2 (Bare)+16mm2	7	7	1.50	-do-	34.5	1013	19.7	0.443	0.492	154
8	3 C x 95 mm2 + 70 mm2 (Bare)+16mm2	19	7	1.50	-do-	37.0	1248	19.7	0.320	0.492	188
9	3 C x 120 mm2 + 70 mm2 (Bare)+16mm2	19	7	1.60	-do-	39.0	1493	19.7	0.253	0.492	218
10	3 C x 150 mm2 + 70 mm2 (Bare)+16mm2	19	7	1.80	-do-	40.0	1803	19.7	0.206	0.492	248

Note : Insulation thickness of 16mm² for lighting conductor : 1.20 mm

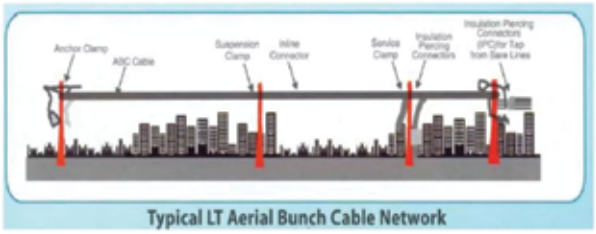
Current rating of 16mm² lighting conductor : 62 Amps

Conductor operating temperature : 90° C

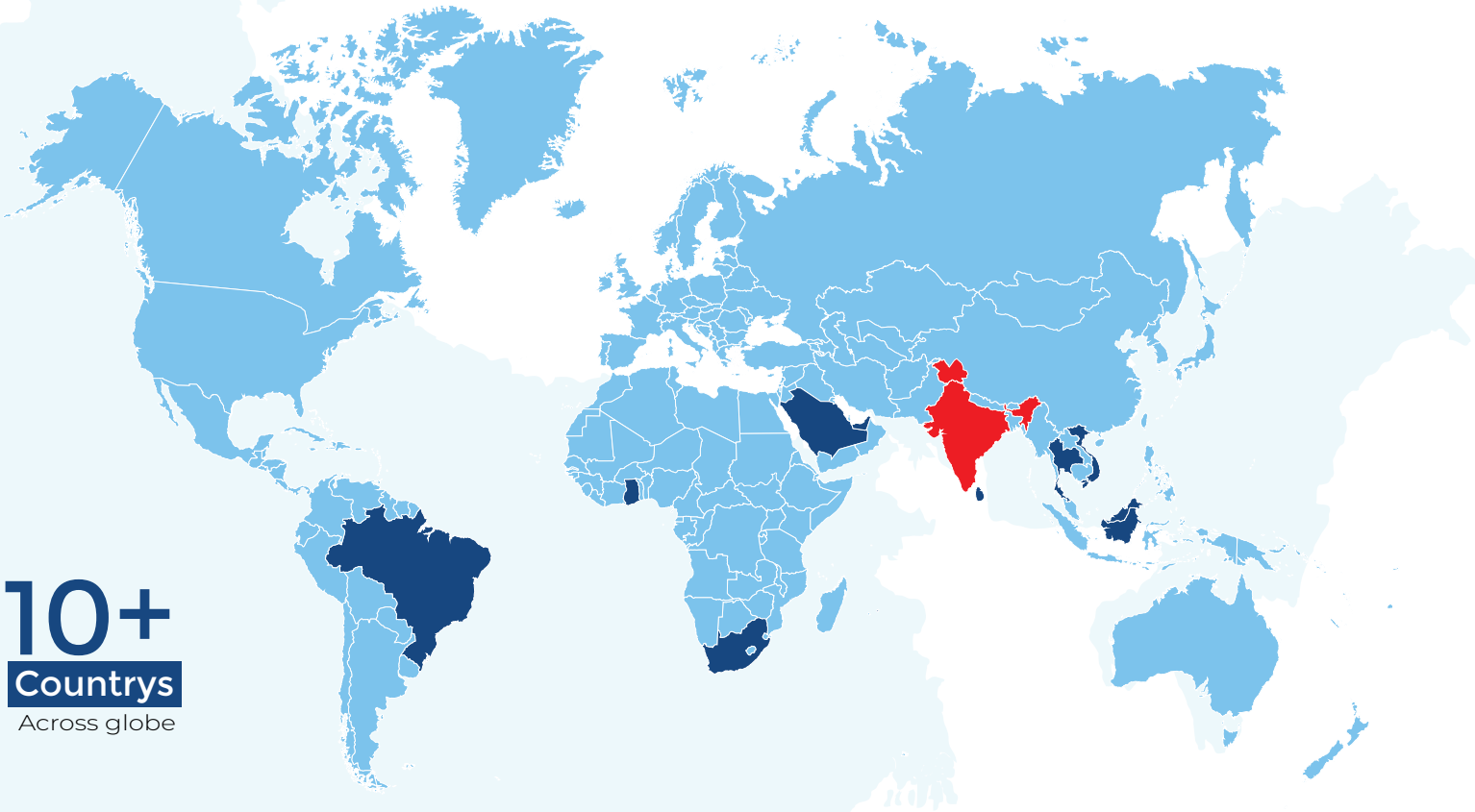
Short circuit temperature for one sec : 250° C

Rating factor for variation in air temperature :

Air-Temperature °C	20	25	30	35	40	45	50
Rating factor	1.32	1.25	1.16	1.09	1	0.9	0.81



Typical LT Aerial Bunch Cable Network



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Telangana	:	Suryakiran complex, 203, Second Floor, SD Road, Secunderabad, Telangana-500003.
Jodhpur	:	Panji ka Bera, Pal Rd, opp. Paliwal Hospital, Gayatri Nagar, Jodhpur, Rajasthan-342008.
Chhattisgarh	:	S P Cold Storage, Near Khamtarai Railway Cross Khamtarai, (C.G) Raipur-492001

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Manufacturing units

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AN ISO 9001 : 2015 / 14001 Company

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